

## REMARKS/ARGUMENTS

These remarks are made in response to the Office Action of April 20, 2007 (Office Action). A petition for an extension of time is included with this response. Nonetheless, the Examiner is expressly authorized to charge any deficiencies to Deposit Account No. 50-0951 to maintain the pendency of this application.

In the Office Action, Claims 1, 2, 11, 12, 21, and 22 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 7,164,771 to Treurniet, et al. (hereinafter Treurniet). Claims 3-5, 13-15, and 23-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Treurniet in view of Non-Patent Literature "Some Waveform and Spectral Features of Vowel Roughness" by Deal, et al. (hereinafter Deal). Claims 6-10, 16-20, and 26-30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Treurniet in view Non-Patent Literature "Acoustic Correlates of Breathy Vocal Quality" by Hillenbrand, et. al (hereinafter Hillenbrand).

### Amendments to the Claims

As previously noted, all claims in the present Application were rejected based on one or more cited references. Although Applicants respectfully disagree with the rejections asserted in the Office Action, Applicants have nonetheless amended at least some of the claims to further emphasize certain aspects of the claims. However, Applicants respectfully assert that any amendment and/or cancellation of claims in this response should not be interpreted as the surrender of any subject matter. Thus, Applicants are not conceding by these amendments and cancellations that any previously submitted claims are not patentable over the references of record. Applicants' present claim amendments and cancellations are only submitted for purposes of facilitating expeditious prosecution of the present Application. Applicants therefore reserve the right

to pursue any previously submitted claims in one or more continuation and/or divisional patent applications.

In this response, Applicants have amended independent Claims 1, 11, and 21 to further emphasize certain aspects of the invention. In particular, Claims 1, 11, and 21 have been amended to recite the limitation that after processing a speaker's received voice signal, one or more attributes of the processed voice signal are identified. The Claims have also been amended to recite that the identified attributes can be compared to baseline quality attributes associated with a baseline measure of voice quality. Finally, the claims have been amended to recite that a measure of voice quality can be provided based on the comparison performed. In particular, the measure defines a degree of voice quality of the speaker as compared to a baseline measure of voice quality. The amendments described herein are fully supported throughout the Specification. In addition, Claims 3-10, 13-20, and 23-30 have also been amended to maintain consistency among the claims. Claims 2, 12, and 22 have been cancelled. No new subject matter has been added by this amendment.

#### Aspects of the Claims

Prior to discussing the cited references, it may be useful to discuss certain aspects of the claims. The claims, as typified by Claim 1, provide systems and methods for diagnosing voices. As recited in Claim 1, a method can include receiving a voice signal from a speaker, processing the received voice signal using an auditory model, and identifying one or more attributes or features of the processed voice signal. (See, e.g., Specification, para. [0025]-[0027]). The identified attributes or features in the processed voice signal can then be compared with one or more baseline voice quality attributes or features in one or more baseline voice signals. (See, e.g., Specification, para. [0033]). These baseline voice quality attributes can be associated with at least one baseline measure of voice quality. (See, e.g., Specification, para. [0029]-[0032]). Finally, based

upon the previous comparison at least one measure of voice quality of said speaker can be determined, where the measurement is relative to a baseline measure of voice quality. (See, e.g., Specification, para. [0033], [0039]).

**The Claims Define Over the Cited References**

As previously noted, independent Claims 1, 11, and 21 were rejected as being anticipated by Treurniet. Treurniet discloses a process and system for determining objectively the differences between an original audio signal and an altered audio signal. Applicant therefore respectfully disagrees with the rejection in the Office Action and submits that Treurniet fails to disclose each and every element of Claims 1, 11, and 21, as amended. In particular, Treurniet fails to disclose a system or method for providing an objective measure of voice quality of a speaker based on an objectively established baseline for voice quality.

Treurniet only discloses a system and method for analyzing differences between an original voice signal and an altered version of the original voice signal. For example, Treurniet discloses that the objective of the invention is to provide a system and method for estimating the differences between a recorded audio signal and the same signal once it has been digitally processed. (See, e.g., Col. 1, lines 15-19.) Thus, the method and system of Treurniet explicitly rely on subtractive operations to generate an error signal to be processed. (See, e.g., FIG. 1 (Comparator 24) and associated text, FIG. 2B (Steps 111, 118) and associated text.) Furthermore, the ultimate result of the cognitive model provides only a measure of a difference relative to the unaltered signal, not to any objective baseline voice quality measures.

Therefore, the method and system of Treurniet cannot be used to provide objective measures of voice quality for a speaker and only provides a measure of the differences between different versions of the *same* voice signal uttered by the speaker. Accordingly,

the method and system in Treurniet cannot even compare voice signals from the same speaker if any of the speech content of the voice signals is different, as the error signal would be useless. Thus, the method and system disclosed in Treurniet cannot provide a measure of voice quality for the speaker based on objective baseline measures and only provides a measure of changes due to some type of signal processing.

In contrast, the amended claims recite the limitation that the analysis of the received speech is based *not* on comparison of versions of the same speech, but rather on an analysis of identified attributes of received speech. That is, once the received speech is processed using an auditory model, specific features in the speech, which are characteristic of the speaker and not of the speech, are identified and measured. These identified characteristics, i.e. voice attributes, can then be compared to an objective baseline model for voice attributes and a relative measure of the quality of the speaker's voice can be provided, irrespective of the content of the speech. Thus the method and system recited in the claims can be used with any voice signal received from any speaker to determine a measure of voice quality of the speaker.

Accordingly, Treurniet, alone or in combination with any other reference of record, fails to disclose, suggest, or render obvious each and every element of independent Claims 1, 11, and 21, as amended. Therefore, Applicants respectfully submit that the independent claims define over Treurniet as well as other references of record. Furthermore, as each of the remaining dependent claims depends from one of the amended claims while reciting further limitations, the Applicants also submit that the dependent claims likewise define over the references of record.

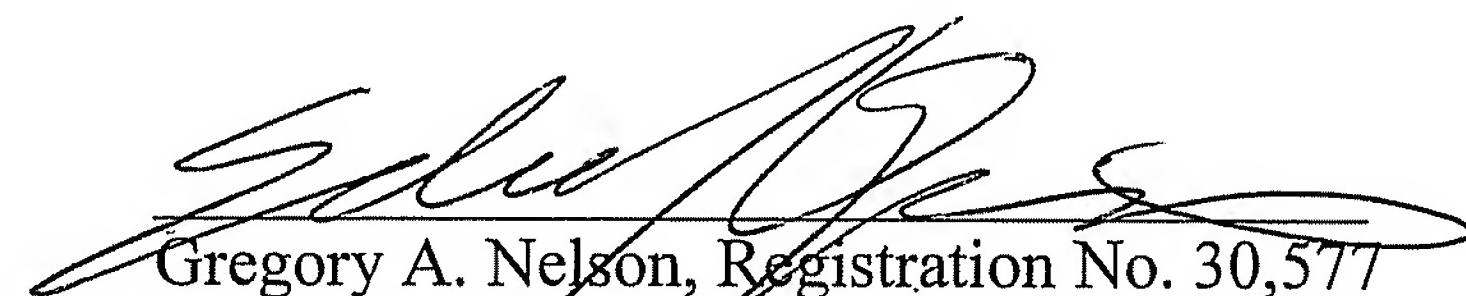
**CONCLUSION**

Applicants believe that this application is now in full condition for allowance, which action is respectfully requested. Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

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